

Specifications
for
2012
Sidewalk Replacement
Project





CITY OF ANTIGO
ADVERTISEMENT FOR BIDS

Replacement of Concrete Masonry Sidewalks,

The City of Antigo is accepting sealed bids for materials and workmanship involved with the Replacement of Concrete Masonry Sidewalks. Information and specifications may be obtained from the Public Works Office, 700 Edison Street, Antigo, WI 54409 or on the city web site at www.antigo-city.org

Bid sheets should be submitted in a sealed envelope marked “**Sidewalk Bids**” to the Clerk-Treasurer’s Office, 700 Edison Street, Antigo, WI 54409, by 10:00 a.m. on Thursday, February 23, 2012.

Bids will be opened in the Public Works Office at 700 Edison St. Antigo WI 54409.

The City of Antigo reserves the right to reject any or all bids and to accept the bid deemed most advantageous to the City. No bid may be withdrawn for a period of 30 days after the opening date.

Charley Brinkmeier
Civil Technologist

Please Publish February 3, & 7

DETAILED SPECIFICATIONS

REMOVE AND REPLACE 6" SIDEWALK AND DRIVEWAY APPROACHES

DESCRIPTION

This work will consist of replacing concrete masonry sidewalks that have been removed by City crews along with any necessary driveway approaches of the dimensions and design as indicated on Detail Sheet and placed in one course on the prepared subgrade or base, at the locations and to the required lines and grades, all as shown on the plans and provided by the contract.

MATERIALS

The materials furnished and used in the work will conform to the following requirements:

- A. **Concrete Masonry:** Mix will be six (6) bags per yard, air content will be a minimum of 4% and a maximum of 7%, maximum slump will be 4".
- B. **Expansion Joint Material:** Expansion joint filler will be performed cork or bituminous fiber conforming to latest ASCII Specifications, Designation: M153, Types I, II, III.
- C. **Test:** Concrete and material tests will be made at the expense of the Contractor. The concrete must pass a 28 day compression strength of 3500 P.S.I., paid for by the Contractor. One test will be taken per block for sidewalk replacement. (See page 7 for information on how to perform required test samples)

EQUIPMENT

Equipment and tools necessary for performing all parts of the work will be satisfactory as to design, capacity, and mechanical condition for the purposes intended. Any equipment which is not maintained in full working order, or which as used by the contractor is proven unsatisfactory, will be repaired, improved, replaced or supplemented to obtain the progress and workmanship contemplated by the contract.

PREPARATION OF THE BASE

The base will be prepared by excavating to the required elevation of the bottom of the base. All soft or unsuitable material will be removed and replaced with suitable material. 18" of granular backfill material will be placed under the new 6" sidewalk. There will also be 18" of granular backfill material under the new 6" driveway approach. These courses will be compacted thoroughly, wetting or drying as needed to secure at least 95% of the maximum dry density at optimum moisture. The base will be finished to a firm, true surface and moistened immediately before the concrete is placed. The base will be sufficiently wide enough to permit placing of forms and performing the required work. All base material will be furnished by the contractor.

TREE ROOTS

Tree roots that have raised a sidewalk slab or driveway approach to be replaced will be cut by the contractor at least six (6") inches outside of the sidewalk or driveway area. All roots within six (6") inches of the sidewalk or driveway approach subgrade must be removed. Cuts will be made perpendicular to the length of root and will be done in a manner so as not to splinter the wood. Cost of this work will be included in price bid per square foot of 6" sidewalk removal and replacement.

SIDEWALK AND DRIVEWAY APPROACH THICKNESS

The thickness of all sidewalks and drive approaches under this contract will be 6" thick, and all public corners and handicap ramps will be 6" thick.

FORMS

Forms will be cleaned and oiled each time they are used. Forms will remain in place for at least 24 hours after concrete is placed. The forms will be smooth, free from warp, of sufficient strength to resist springing out of shape and of a depth to conform to the depth of the proposed work. All foreign material will be removed from forms that have been previously used. The forms used must be a full six (6") inches in depth, and staked and set to establish lines, their upper edges conforming to the grade of the finished work. The construction of sidewalks without forms is prohibited. The side pitch of sidewalks will be 1/4 inch per foot and shall slope toward the street. The driveway approach will pitch from the sidewalk to the back of curb.

PLACING CONCRETE

Before placing concrete, the base and forms will be checked and approved by the Engineer or Inspector. All water and mud will be removed from the subgrade before the concrete is placed. The concrete will be placed on a moist sub-base, deposited to the proper depth, and consolidated and spaded sufficiently to bring the mortar to the surface. All equipment for mixing and transporting the concrete will be cleaned; all debris will be removed from the places to be occupied by the concrete and the forms will be thoroughly oiled. No concrete that has partially hardened or been contaminated by foreign material will be deposited on the work, nor will re-tempered concrete be used.

DRIVEWAY APPROACHES ABUTTING EXISTING SIDEWALK

Where new driveway approaches abuts any existing sidewalk, the Contractor will install one half (1/2") inch coated reinforcement rods, eighteen (18") inches long, and at two (2') foot intervals. These will be drilled nine (9") inches into the existing sidewalk with the remaining nine (9") inches extending into the new pour. If this isn't feasible to do because of the thickness of the existing walk, the Contractor will undermine the existing sidewalk two (2") along the new pour to assure stability.

ABUTTING EXISTING SIDEWALK

Where the new 6" sidewalk abuts an existing walk, the Contractor will install three (3) 1/2" coated reinforcement rods twelve (12") inches long (drilled six (6") inches into the existing sidewalk and the remaining six (6") inches will extend into the new pour). If this isn't feasible to do to the existing walk because of its thickness, the Contractor will undermine the existing sidewalk two (2") inches under and two (2") inches in.

SIDEWALK "SHUT-OFFS"

The Contractor will install a "shut-off" at the end of each concrete pour for sidewalk. This "shut-off" will have an extra 1 1/2" board attached horizontally and centered along the six(6") inch shut-off. The keyed side will protrude into the fresh pour of concrete.

FINISHING OF CONCRETE

The concrete will be struck off, then floated with a wood float until the surface has a true contour. The surface will then be trowelled smooth and brushed with a calcimine brush dipped in water to roughen the surface. Excessive trowelling will not be permitted. The edges at the sides and joints are to be rounded

with an edger or groover of 1/4" radius to prevent chipping.

CURING

As soon after finishing operations as the free water has disappeared, the concrete surface will be sealed by spraying on it a uniform coating of curing material, meeting the requirements of Subsection 409.2.7.1 of Standard Specifications for Road and Bridge Construction, or an application of AK-2 concrete sealer, in such a manner as to provide a continuous water-impermeable film on the entire concrete surface.

In order to ensure uniform consistency and dispersion of pigment in the curing material, it will be well agitated in the supply drum immediately before transfer to the distributor and kept thoroughly agitated during application.

The curing compound will be applied by means of power spraying equipment. The material will be applied to form a uniform coverage at the rate of not less than one half gallon per 100 square feet of surface area.

The curing compound may be applied in either one or two applications in accordance with the directions of the manufacturer. However, if applied in two coatings, the second will be applied not later than 30 minutes after the first.

In the event the coating is damaged within 72 hours after being applied due to joint sawing operations or otherwise, the affected areas will be re-coated without delay and at the same rate as prescribed above for the original application.

Should the spraying equipment fail and duplicate spraying equipment is not immediately available, further placing of concrete will be suspended until properly operating spraying equipment is provided, and the portion of finished concrete not satisfactorily coated with the curing compound will be cured by other means satisfactory to the Engineer.

Within 30 minutes after the forms have been removed, the edges of sidewalk will be coated with the curing compound, applied at the same rate as on the surface. Hand operated sprayers may be used for spraying the edges.

Failure to comply with the strict interpretation of this section will be cause for rejection of the portion of the work affected.

TRANSVERSE JOINTS

For sidewalks of uniform width, transverse joints will be constructed at right angles to the centerline of the sidewalk. Transverse joints will be placed at intervals of approximately 5 feet and will be formed by inserting a metal parting strip in the concrete after it has been struck off and consolidated and while the concrete is still workable. Insertion of the metal parting strip will be 1/4 (one fourth) of the walk depth or 1 1/4 inches. The edges of the sidewalk along the forms, joints, and metal slab division forms will be rounded with an edger of 1/4" radius. When the sidewalk is constructed in partial width slabs, transverse joints in adjacent slabs will be placed in line with like joints in the previously constructed slabs.

DRIVEWAYS

In areas where sidewalks exist and new curb and gutter is being installed, all driveway approaches will be "poured concrete".

In areas where sidewalks DO NOT exist and new curb and gutter is being installed, all driveway approaches will be replaced with bituminous pavement or concrete. The Property Owner has the right to

determine either bituminous pavement or concrete as replacement. Replacement will be up to the property line or as determined by the Engineer or Inspector in the field.

Blacktop driveways behind new sidewalk: The Inspector will determine and mark, how far back the asphalt drive (behind the new sidewalk) will be repaired. The Contractor will saw - cut the existing asphalt driveway where it is marked, remove the old asphalt, excavate out this area for 3" of asphalt, compact this area and the Contractor will pave it with "surface material".

These driveway approaches will be installed according to the Typical Sections and Detail Sheet in the plans.

Payment for this will be paid at the contract unit price per square foot under its respective bid item.

CONTRACTION JOINTS

Contraction joints will be cut at intervals with 3/16 inch metal blades. These joints will be cut 1 1/2 inches deep. Joints will be cut at approximately five foot intervals unless ordered otherwise by the Engineer.

EXPANSION JOINTS

Where walks are built up to the curb, either at crosswalks or in front of private property, a half (1/2) inch bituminous expansion joint, the minimum width to be equal to the thickness of the walk, will be properly installed between the curb and the walk. The expansion material will extend entirely through the concrete so as to provide a half (1/2) inch separation between sidewalk and curb. The sidewalk surface when abutting a curb will be 1/2 inch above the curb grade, unless surface drainage is affected in doing so. Expansion joints will be placed wherever the new sidewalk abuts buildings, other rigid structures, foundations, or as determined by the Director of Public Works or the Inspector in the field. If concrete is poured between the sidewalk and curb, 1/2 inch expansion joint is required continuously along the curb.

NOTE: Whenever the entire area between the back of curb and the right-of-way of a lot line is to be constructed with concrete sidewalk and when a permanent structure is located within such area or on the right-of-way or lot line, the sidewalk will be constructed first, after that area is finished and has set, the area between the sidewalk and curb will then be constructed as to retain a uniform slope.

PROTECTION OF NEW SIDEWALK AND DRIVEWAY APPROACH

The Contractor will provide and use sufficient tarpaulins to completely cover all sections that have been placed within the preceding twelve (12) hours. The Contractor will erect and maintain suitable barricades to protect the finished surface. The Contractor will provide for a minimum of one finisher to remain on the project site after final finishing of the sidewalks and driveway approaches until such time as the concrete sidewalks and driveway approaches have hardened to resist surface scarring caused by footprints, handprints, or any other type of imprint, malicious or otherwise. The cost for providing the finisher will be included in the price per square foot of sidewalk and driveway approaches. Sections of work damaged by traffic or other causes occurring prior to the acceptance of the work will be repaired or replaced, as the Engineer may direct, by the Contractor at his own expense and in a manner satisfactory to the Engineer.

CONTACT OF PROPERTY OWNERS

Prior to construction of sidewalks and driveway approaches, the contractor will be responsible for contacting and giving notification to the property owners that no traffic will be allowed on the new driveway approach for a minimum of seven (7) days following placement. All property owners will be given twenty-four (24) hours notice to remove the vehicles from their driveway.

DISPOSAL OF DEBRIS

The Contractor will remove all broken concrete, excess dirt, debris and the like created by his work and dispose of it with his own resources. Removal and disposal of old concrete, etc. will be included in bid price per square foot of sidewalk. All debris is to be removed daily. No stockpiling on the street is allowed.

BACKFILLING AND RESTORING THE SITE OF THE WORK

After the concrete has cured and the forms removed, the spaces along the sides will backfilled with a minimum of 4" of screened topsoil and thoroughly compacted to assure no settlement. If settlement occurs along these areas, it will be the responsibility of the Contractor to backfill these areas again and must meet approval of the Engineer or Inspector. Prior to backfilling along these areas all stones, concrete, and any other debris will be removed by the Contractor. Said top soil will be free of lumps, stones, sticks, or any other foreign materials, and must be approved by the Engineer or Inspector prior to placement. The Contractor must furnish and haul all necessary backfill and top soil material and his responsibility to determine such amounts. Any backfill or top soil material that is placed and not acceptable to the Engineer or Inspector will be removed at the Contractor's expense. However, any other lawn damage adjacent to the construction project (equipment damage, etc.) will be repaired by the Contractor in the same like manner as previously stated. The Contractor is advised to disturb as little as possible of existing lawns. Restoration shall include topsoil, fertilizer, seeding, and mulch in all disturbed areas. Seed mix must be approved by the Engineer or Inspector. All lawn areas disturbed will be seeded - 1 pound per 400 square feet. The Contractor will restore the site of the work to a neat and workmanlike condition. "REMOVED ONLY" means backfilled and restored by the Contractor.

PEDESTRIAN WALKWAYS AND INTERSECTIONS

The Contractor will be required to maintain pedestrian walkways throughout the job wherever sidewalks now exists. If walks are removed, a gravel base must be placed and maintained until the sidewalk is constructed. Crosswalks across all streets at all intersections must be maintained at all times.

STREET AND STOP SIGNS

In the event that the Contractor must remove a street or stop sign to facilitate the construction of the sidewalk, he will replace it in the proper place and condition as specified by the Engineer or City Sign Man.

PROPERTY IRONS

There are property irons existing in various locations of this project. Most of these irons are located at lot corners, angle points or at points of curvature in the right-of-way. The Contractor will be responsible for damage to any and all property irons. Any property irons that are bent, removed or damaged by the Contractor will be replaced by a registered land surveyor at the Contractor's expense.

CURB BOXES, MANHOLES AND WATER STOP BOXES

If curb boxes, manholes, or water stop boxes are encountered with the removal and replacement of sidewalk, care should be taken to preserve them. If damage is done to any of the above mentioned items through carelessness by the Contractor in their operations, he will immediately notify the Engineer or Inspector. The Engineer or Inspector will notify the appropriate City Department and that department will repair the damaged item. All labor, materials and equipment used in these repairs will be charged to the Contractor.

STREET DAMAGE AND CLEANUP

The Contractor will be liable for any damage to streets caused by his operations. This also includes any damage to the streets which occurs beyond the construction area, or along haul routes. The Contractor will be responsible to clean up all mud, gravel, top dirt or debris from any street or haul route which was deposited by his operations. The Contractor will be required to clean these streets daily if required by the Engineer or Inspector at his expense.

SAWING OF CONCRETE

All saw cutting of concrete in this project as specified will be included in the bid price per square foot for sidewalk.

PROTECTION DURING COLD WEATHER

Except by specific written authorization by the Engineer, concreting operations will not be continued when a descending air temperature in the shade and away from artificial heat falls below 40° F., nor resumed until an ascending air temperature in the shade and away from artificial heat reaches 35° F.

CONCRETE POURED AFTER OCTOBER 15TH

All concrete sections poured after October 15 must be treated with a surface treatment of linseed oil. Linseed oil must be sprayed in two applications, the first application to be a mixture of 50% boiled linseed oil and 50% mineral spirits applied at a rate of 40 square yards per gallon of mixture, the second application to be 75% linseed oil to 25% mineral spirits applied at a rate of 70 square yards per gallon.

IDENTIFICATION

The Contractor will imprint each end of a repaired or new section of walk with his stamp. The stamp will have on it the Contractor's name and current year.

METHOD OF MEASUREMENT

4" and 6" sidewalks and driveway approaches will be measured by area in square feet, and the quantity measured for payment will be the amount actually completed and accepted in accordance with the terms of this contract, computed from dimensions as shown on plans or as measured in the field by the Engineer or Inspector along with the Contractor or his representative.

BASIS OF PAYMENT

The area measured as provided above, will be paid for at the contract unit price per square foot for the items of 6" sidewalk and driveway approach removal and replacement under their respective bid items. Partial payments for work which is complete and acceptable by the city shall be paid within a reasonable time to the Contractor, if requested. A ten (10%) percent withholding quantity shall be held by the City for retainer.

TESTS FOR CONCRETE SAMPLES

Sampling Methods ASTM C172

If the sample is shoveled from the forms, do not take it from the over-watered concrete which collects on the surface of the concrete mass. If the sample is taken from the discharge stream of the concrete truck or mixer, take it at three different intervals, but never near the beginning or end.

The sample should weigh about 100 pounds. Carry it in two buckets to the place the cylinders are to be made and stored. Combine and re-mix the samples with a shovel in a wheelbarrow, buggy, or metal pan to ensure uniformity before filling the molds.

Cylinder Casting ASTM C31

Use only steel, plastic or paraffined paper molds, 6 inches in diameter by 12 inches long, with base plates or bottoms. Place the molds on a smooth, firm, level surface and fill with three equal layers of concrete, rodding each layer 25 times with a 5/8-inch round rod. Be sure to penetrate the previous layer slightly. After rodding, tap the sides of the mold to close any voids. The third layer should contain an excess which can be struck off smooth and level after rodding. Three cylinders are normally made for testing.

Fill out the data sheet thoroughly describing mix and placement. Then attach an envelope containing a copy of the data sheet to the side of each molded cylinder and cover the cylinder with a plastic bag to prevent moisture loss.

TEST CYLINDER HANDLING

Do not remove or disturb the cylinders for 24 hours. Keep them in a protected area where the temperature remains between 60-80 degrees F. Then ship the cylinders to the testing laboratory. Keep them moist and protected.

Slump Test ASTM C143

Re-mix the concrete on a nonabsorbent surface. Fill the cone in three layers of equal volume and rod each layer 25 times with a 5/8-inch round rod. Clean away the excess concrete around the base before lifting the cone. Be careful that the slump cone is lifted vertically a distance of 12 inches in 5 ± 2 seconds. The distance in inches that the concrete sinks after the cone is lifted is termed the slump. Measure this with a ruler. If the molded concrete falls over, disregard this test and start over.

Use a truncated cone with a 4-inch top diameter, 8-inch bottom diameter and 12-inch height, made of 16-gage sheet metal. Be sure the slump cone is clean and pre-wetted.

Air Content Test ASTM C231

Place the air meter bowl on a flat and level surface. In the measuring bowl place a representative sample of concrete in three equal layers. Rod each layer with 25 uniformly distributed strokes of the tamping rod. Close any voids by tapping the sides of the bowl 10-15 times with a rubber or leather mallet. After rodding and tapping, strike off the excess so that the concrete is flush with the bowl. Thoroughly clean the flange of the bowl and close the cover. Add water through the petcocks to remove trapped air under the cover. Pump air meter to initial pressure and close the petcocks. Release the thumb lever, tap the sides of the bowl sharply to relieve local restraints, and lightly tap the gage to stabilize gage hand; record the percentage of air to the nearest 0.1 percent.

OTHER CONDITIONS

The abutting property owner can repair the sidewalks themselves; therefore, the City cannot guarantee any specific quantity. No claims of any sort will be allowed for deviation of quantities of work performed from amounts listed in the proposal.

All work is to be done with a City Inspector being present. Work done without an inspector may not be accepted.

The Contractor will only remove sidewalk and driveway approaches, which have been marked by the City. Any others will not be paid for.

All material removed under this contract will become the property of the Contractor, and will be disposed of by the Contractor.

The latest edition of the State of Wisconsin, Department of Transportation, Standard Specifications for Road and Bridge Construction will be considered a part of these specifications and its provisions apply except where specifically modified.

The Contractor warrants, and agrees, when signing this contract, that he will replace, within three (3) years after final acceptance of the work under the contract, any work poured by him that develops cracking, scaling, or spalling of the surface due to chert or other deleterious material of deficiency in the concrete.

The City reserves the right to authorize work outside the target area. Such work will not exceed 20% of the contract.



"Antigo Area on the go"

**2012 CONCRETE SIDEWALK REPLACEMENT
BID SHEET**

COMPANY: _____

DATE: _____

CONTACT: _____

ADDRESS: _____

PHONE: _____

FAX: _____

E-MAIL: _____

Sidewalk Replacement Approximately 3,950 sq ft

Price

1. Removal and Replacement of Existing Concrete
Sidewalk per City Specifications. (the winning bid will
be based on this number)

\$

Per Sq. Foot

Special Bid Items

Price

1. Root Grinding

\$

Per Tree

2. Stump Removal

\$

Per Tree

3. Cold Weather Protection (if needed)

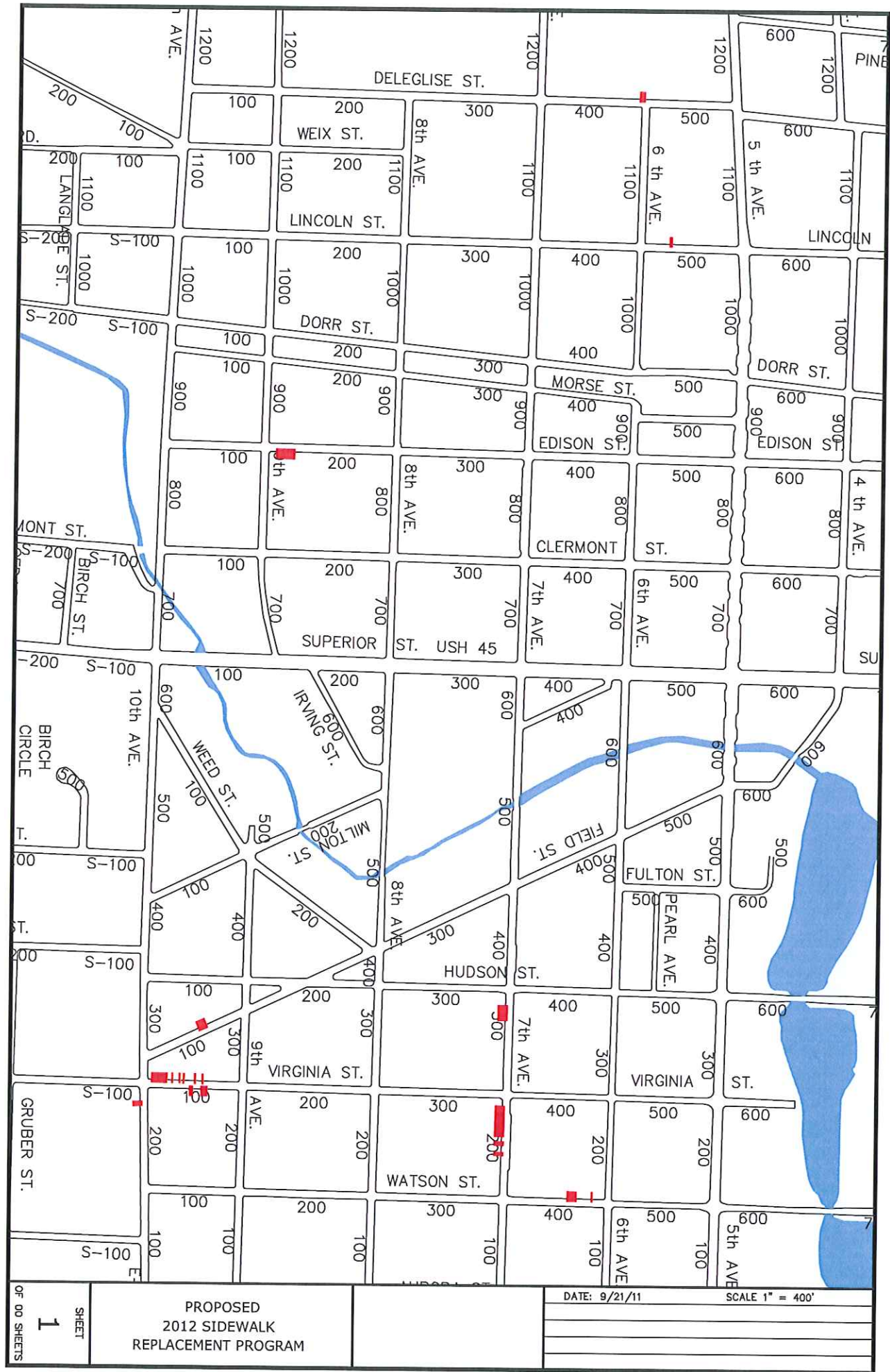
\$

Per Sq. Foot

4. AK-2 Concrete Sealer

\$

Per Sq. Foot



OF 00 SHEETS
 SHEET
1

PROPOSED
 2012 SIDEWALK
 REPLACEMENT PROGRAM

DATE: 9/21/11 SCALE 1" = 400'